



UNITED STATES DEPARTMENT OF COMMERCE  
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/482,859	01/14/00	HAGIWARA	H 511.33114VV4

020457  
IM22/1018  
ANTONELLI TERRY STOUT AND KRAUS  
SUITE 1800  
1300 NORTH SEVENTEENTH STREET  
ARLINGTON VA 22209

EXAMINER
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CHU, J

ART UNIT	PAPER NUMBER
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1752

12

DATE MAILED: 10/18/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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**Office Action Summary**

Application No.	09/482,859	
Examiner	Art Unit John S. Chu	
	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 27 August 2001.  
2a) This action is FINAL. 2b) This action is non-final.  
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 10-14,21-25,28-31 and 34-36 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) Claim(s) \_\_\_\_\_ is/are allowed.  
6) Claim(s) 10-14,21-25,28-31 and 34-36 is/are rejected.  
7) Claim(s) \_\_\_\_\_ is/are objected to.  
8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.  
10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.  
12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. 08/299,628.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.  
14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.  
15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) Notice of References Cited (PTO-892)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.  
4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.  
5) Notice of Informal Patent Application (PTO-152)  
6) Other: \_\_\_\_\_

**DETAILED ACTION**

This Office action is in response to the amendment received August 27, 2001.

***Claim Rejections - 35 USC § 102***

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

1. Claims 25, 29-31, and 34-36 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by HAGIWARA ET AL.

The claimed invention is drawn to a photosensitive resin composition which comprises (1) a polyimide precursor formed from an oxydiphthalic acid or acid anhydride thereof with a diamine, (2) an addition-polymerizable compound, and (3) a photoinitiator, and which is adapted to be exposed and developed using an I-line stepper which uses monochromatic light.

HAGIWARA ET AL anticipates the claimed invention at Example 13 and Synthesis Example 19. The polyamic acid is a condensation product of an oxyphthalic acid and diamino diphenyl ether wherein the polyamic acid is in a composition with a tetraethylene glycol diacrylate and a photoinitiator of 4,6 dimethyl-7-ethylaminocourmarin.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1752

3. Claims 10-14, 21-25, 28-31 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of HAGIWARA ET AL, ALDRICH ET AL and MUELLER ET AL.

The claimed invention has been recited above and is included by reference.

HAGIWARA ET AL has been discussed above for a composition comprising a polyamic acid, a diacrylate and a photoinitiator. The reference fails to disclose the claimed film thickness coated on a substrate at 20  $\mu\text{m}$ , however does disclose coated compositions to have a thickness of 10  $\mu\text{m}$  and 5  $\mu\text{m}$ , see column 51, lines 36-41.

ALDRICH ET AL discloses a photosensitive composition comprising a polyamic acid, an ethylenically unsaturated compound and a photoinitiator designed to be used as photoresists for making electronic devices. Column 10, lines 40-45 discloses that the application of the photoresist in ALDRICH ET AL can be coated at a thickness of 2-50 microns. Applicants are further directed to the examples 2 and 30, which demonstrate the desired thicknesses to be 16 microns and 20 microns, respectively. This disclosure clearly motivates the skilled artisan to coat the photoresists at any thickness from 2 to 50 microns and reasonably expect same or similar results.

MUELLER ET AL is cited to disclose a photoresist composition comprising a polyamic acid, having a photoinitiator and tetraethylene glycol dimethacrylate the ethylenically unsaturated compound.

It would have been *prima facie* obvious to one of ordinary skill in the art of photoresist compositions comprising polyamic acid, an ethylenically unsaturated compound and a photoinitiator, to coat the film at a thickness of 20  $\mu\text{m}$  and to use conventional ethylenically

Art Unit: 1752

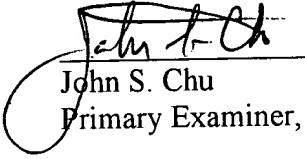
unsaturated compounds such as tetraethylene glycol dimethacrylate and reasonably expect same or similar results as disclosed in HAGIWARA ET AL for compositions which are excellent in developability and high film strength.

Motivation is based on the desire to have a composition which can be coated to form photoresists for electronic devices which have excellent photolithographic properties.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John S. Chu whose telephone number is (703) 308-2298. The examiner can normally be reached on M-F from 9:30 am to 6:00 pm.

The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
John S. Chu

Primary Examiner, Group 1700

J.Chu  
October 16, 2001